Public Workshop to Discuss Reducing Emissions from Offroad Mobile Cargo Handling Equipment at Ports and

Intermodal Rail Yards

Proposed Regulatory Concepts

May 18, 2005 Sacramento, California

California Environmental Protection Agency



Air Resources Board

Overview

- Background
- Applicability
- Updated Regulatory Concepts
- Next Steps

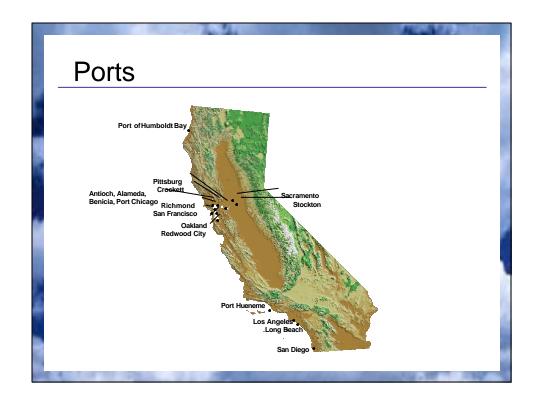


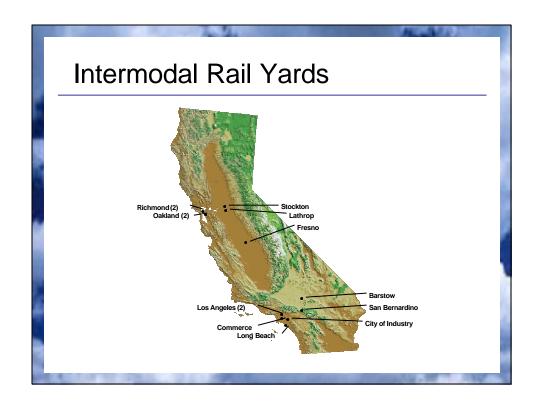


Goals

- Develop statewide control measure to address emissions from mobile dieselfueled cargo handling equipment
 - Achieve maximum emission reductions (both near term and long term) for PM and NOx
- Consideration by the Board in fourth quarter 2005







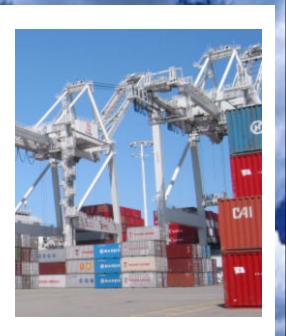
Examples of Cargo Handling **Equipment Types**

- yard trucks
- side handlers
- reach stackers
- rubber-tired gantryexcavators cranes
- forklifts
- euclids

- skid steer loaders
- top handlersrubber-tired loaders
 - sweepers
 - dozers

 - mobile cranes
 - railcar movers

Proposed Regulatory Concepts



Overview: Modifications to the Preliminary Concepts

- Added definitions for equipment types
- Removed idling provision
- Defined requirements for newly purchased equipment
- Revised requirements for yard trucks and all other equipment
- Added record keeping and reporting requirements
- Added prohibition clause for selling, renting, and leasing

Proposed Concepts for Newly Purchased or Leased Equipment

- DMV Registered (onroad) equipment
 - meet current year onroad standard
- Non-registered (offroad) equipment
 - 1. meet current year onroad standard; or
 - 2. if not feasible, meet Tier 4 offroad standard for model year and rated hp; or
 - 3. if not feasible, meet Tier 2 or 3 offroad standard for model year and rated hp with highest level available VDECS

Process/criteria for determining feasibility will be developed

In-Use Yard Trucks

Summary of Changes to Proposed Concepts

- Accelerated turnover 2 to 3 years
 - based on 10-year useful life
 - more time for multiple vehicles, installed controls, and onroad engines
- Diesel PM standard
 - 2007 or later onroad, Tier 4 offroad, or 0.01 g/bhp-hr
- Oldest engines (Tiers 0 1) replace first

In-Use Yard Trucks

Compliance Table:

pre-1996 to 2002 Offroad Engines

Yard Truck with Offroad Engine Installed

Model Year	Diesel PM Standard	Compliance Date*			
		Fleets with 1 to 3 yard trucks	Fleets with 4 or more yard trucks		
			25%	50%	100%
Pre-1996 to 2002: No VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	2007	-	2007	2008
Pre-1996 to 2002: Any Level VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	2008	-	2008	2009

In-Use Yard Trucks

Compliance Table:

2003 to 2006 Offroad Engines

Yard Truck with Offroad Engine Installed

Model Year	Diesel PM Standard	Compliance Date*				
		Fleets with 1 to 3 yard trucks	Fleets with 4 or more yard trucks			
			25%	50%	100%	
2003 to 2006: No VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	model year + 7 years	model year + 7 years	model year + 8 years	model year + 9 years	
2003 to 2006: Level 1 VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	model year + 8 years	model year + 8 years	model year + 9 years	model year + 10 years	
2003 to 2006: Level 2 VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	model year + 9 years	model year + 9 years	model year + 10 years	model year + 11 years	
2003 to 2006: Level 3 VDECS installed by December 31, 2006	None					

In-Use Yard Trucks

Compliance Table: 2003 to 2006 Onroad Engines

Yard Truck with Onroad Engine Installed

Model Year	Diesel PM Standard	Compliance Date*				
		Fleets with 1 to 3 yard trucks	Fleets with 4 or more yard trucks			
			25%	50%	100%	
1996 to 2006: No VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	model year + 8 years	Model year + 8 years	Model year + 9 years	model year + 10 years	
1996 to 2006: Any Level VDECS installed by December 31, 2006	Engine certified to 2007 or later onroad standards or Tier 4 offroad standards; or 0.01 g/bhp-hr	model year + 9 years	model year + 9 years	model year + 10 years	model year + 11 years	

In-Use Yard Trucks

Additional Standards

- Offroad engines
 - meet HC, NOx, NMHC+NOx, and CO certified offroad standards for model year and horsepower
- Onroad engines
 - meet HC, NOx, NMHC, NMHC+NOx, and CO certified onroad standards for model year and horsepower

In-Use Equipment Excluding Yard Trucks Summary of Changes to Proposed Concepts

4 BACT options

- 1. 0.01 g/bhp-hr PM onroad or Tier 4 offroad
- 0.1 g/bhp-hr PM onroad or Tier 2/3 offroad + highest level VDECS
- 3. alternative fuel or heavy-duty pilot ignition engine
- 4. highest level VDECS

If option 2 or 4 is chosen:

- meet Tier 4 offroad by Dec. 31, 2015
- Compliance Extensions Added

In-Use Equipment Excluding Yard Trucks

BACT Compliance Schedule

		Compliance Date*				
	Engine Model	Fleets with 3 or	Fleets with 4 or More			
Group	Years	Fewer	25%	50%	75%	100%
1	pre-1988	2007	2007	2008	2009	2010
2	1988-1995	2008	2008	2009	2010	2011
3	1996-2002	2009	2009	2010	2011	2012
4	2003-2006	2010	2010	2011	2012	2013

^{*} Compliance date refers to December 31st of the year indicated.

In-Use Equipment Excluding Yard Trucks

Compliance Extensions

- No VDECS available
 - annual extension (limited to two one-year extensions)
- Early retirement
 - if retired within one year of compliance date
- Use of experimental Diesel PM Controls
 - up to 2 year extension

Record Keeping Requirements

- Annual Record Keeping
 - keep on hand (only have to submit with compliance plan and demonstration of compliance below)
 - owner/operator information
 - equipment/engine information
 - demonstration of compliance

Reporting Requirements

- Compliance Plan
 - submit by January 31, 2007
 - not binding; want to ensure owner/operator is aware of compliance requirements and has developed plan
- Demonstration of Compliance
 - submit by earliest applicable compliance date
 - identify control strategy implemented
- Annual Reporting
 - submit annually by January 31st beginning in 2007
 - include company and contact information and location of equipment

Prohibitions

 Can't knowingly sell, rent, or lease new or used cargo handling equipment that does not meet the performance requirements

Next Steps



- Yard truck testing
- Emissions inventory
- Impact Analysis
- Stakeholder meetings
- Workgroup meetings
- Next public workshop late summer 2005

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